SEQUENCE LISTING

<110> O'Keefe, Theresa L.

<120> USE OF HMGB FRAGMENTS AS
ANTI-INFLAMMATORY AGENTS

<130> 3258.1009-001

<150> 60/427,841
<151> 2002-11-20

<160> 58

<170> FastSEQ for Windows Version 4.0

<210> 1
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<213> Homo sapiens

<400> 1

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 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
            20                  25                  30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
        35                  40                  45
Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65                  70                  75                  80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
                85                  90                  95
Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
            100                 105                 110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
        115                 120                 125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
    130                 135                 140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145                 150                 155                 160
Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
                165                 170                 175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
            180                 185                 190
Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Asp Glu
        195                 200                 205
Glu Glu Asp Asp Asp Asp Glu
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<213> Mus musculus

<400> 2
Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45
Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60
Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95
Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
100 105 110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
115 120 125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
130 135 140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160
Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
165 170 175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Asp Asp Glu Glu
180 185 190
Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Glu
195 200 205
Glu Glu Asp Asp Asp Asp Glu
210 215

<210> 3
<211> 209
<212> PRT
<213> Homo sapiens

<400> 3
Met Gly Lys Gly Asp Pro Asn Lys Pro Arg Gly Lys Met Ser Ser Tyr
1 5 10 15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30
Asp Ser Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45
Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met Ala
50 55 60
Lys Ser Asp Lys Ala Arg Tyr Asp Arg Glu Met Lys Asn Tyr Val Pro
65 70 75 80
Pro Lys Gly Asp Lys Lys Gly Lys Lys Lys Asp Pro Asn Ala Pro Lys
85 90 95
Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu His Arg Pro Lys
100 105 110
Ile Lys Ser Glu His Pro Gly Leu Ser Ile Gly Asp Thr Ala Lys Lys
115 120 125
Leu Gly Glu Met Trp Ser Glu Gln Ser Ala Lys Asp Lys Gln Pro Tyr
130 135 140
Glu Gln Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145 150 155 160

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Ala Tyr Arg Ala Lys Gly Lys Ser Glu Ala Gly Lys Lys Gly Pro Gly
                165                 170                 175
Arg Pro Thr Gly Ser Lys Lys Lys Asn Glu Pro Glu Asp Glu Glu Glu
            180                 185                 190
Glu Glu Glu Glu Glu Asp Glu Asp Glu Glu Glu Glu Asp Glu Asp Glu
        195                 200                 205
Glu
```

<210> 4
<211> 54
<212> PRT
<213> Homo sapiens

<400> 4

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Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1               5                  10                  15
Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
            20                  25                  30
Ala Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
        35                  40                  45
Pro Pro Lys Gly Glu Thr
    50
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<210> 5
<211> 69
<212> PRT
<213> Homo sapiens

<400> 5

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Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu
 1               5                  10                  15
Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp
            20                  25                  30
Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp
        35                  40                  45
Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu
    50                  55                  60
Lys Asp Ile Ala Ala
65
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<210> 6
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<213> Homo sapiens

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gatgggcaaa ggagatccta ag 22

<210> 7
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<212> DNA
<213> Homo sapiens

<400> 7
gcggccgctt attcatcatc atcatcttc 29

<210> 8
<211> 22
<212> DNA
<213> Homo sapiens

<400> 8
gatgggcaaa ggagatccta ag 22

<210> 9
<211> 32
<212> DNA
<213> Homo sapiens

<400> 9
gcggccgctc acttgctttt ttcagccttg ac 32

<210> 10
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<212> DNA
<213> Homo sapiens

<400> 10
gagcataaga agaagcaccc a 21

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<212> DNA
<213> Homo sapiens

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gcggccgctc acttgctttt ttcagccttg ac 32

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<212> DNA
<213> Homo sapiens

<400> 12
aagttcaagg atcccaatgc aaag 24

<210> 13
<211> 32
<212> DNA
<213> Homo sapiens

<400> 13
gcggccgctc aatatgcagc tatatccttt tc 32

<210> 14
<211> 22
<212> DNA
<213> Homo sapiens

<400> 14

gatgggcaaa ggagatccta ag 22

<210> 15
<211> 24
<212> DNA
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<400> 15
tcacttttt gtctcccctt tggg 24

<210> 16
<211> 20
<212> PRT
<213> Homo sapiens

<400> 16
Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu
1 5 10 15
Tyr Arg Pro Lys
20

<210> 17
<211> 54
<212> PRT
<213> Homo sapiens

<400> 17
Pro Asp Ser Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu
1 5 10 15
Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met
20 25 30
Ala Lys Ser Asp Lys Ala Arg Tyr Asp Arg Glu Met Lys Asn Tyr Val
35 40 45
Pro Pro Lys Gly Asp Lys
50

<210> 18
<211> 216
<212> PRT
<213> Homo sapiens

<400> 18
Met Gly Lys Gly Asp Pro Lys Lys Pro Thr Gly Lys Met Ser Ser Tyr
1 5 10 15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
20 25 30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
35 40 45
Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
50 55 60
Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65 70 75 80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
85 90 95

```
Arg Leu Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
            100                 105                 110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
        115                 120                 125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
    130                 135                 140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145                 150                 155                 160
Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
                165                 170                 175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
            180                 185                 190
Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Glu Asp
        195                 200                 205
Glu Glu Glu Asp Asp Asp Asp Glu
    210                 215
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<210> 19
<211> 182
<212> PRT
<213> Homo sapiens

<400> 19

```
Met Gly Lys Gly Asp Pro Lys Lys Pro Thr Gly Lys Met Ser Ser Tyr
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
            20                  25                  30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
        35                  40                  45
Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65                  70                  75                  80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
                85                  90                  95
Arg Leu Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
            100                 105                 110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
        115                 120                 125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
    130                 135                 140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145                 150                 155                 160
Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
                165                 170                 175
Lys Ala Glu Lys Ser Lys
            180
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<210> 20
<211> 74
<212> PRT
<213> Homo sapiens

<400> 20

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Phe Lys Asp Pro Asn Ala Pro Lys Arg Leu Pro Ser Ala Phe Phe Leu
 1               5                  10                  15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
            20                  25                  30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
        35                  40                  45
Ala Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys
    50                  55                  60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65                  70
```

<210> 21
<211> 85
<212> PRT
<213> Homo sapiens

<400> 21

```
Met Gly Lys Gly Asp Pro Lys Lys Pro Thr Gly Lys Met Ser Ser Tyr
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
            20                  25                  30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
        35                  40                  45
Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65                  70                  75                  80
Pro Lys Gly Glu Thr
                85
```

<210> 22
<211> 77
<212> PRT
<213> Homo sapiens

<400> 22

```
Pro Thr Gly Lys Met Ser Ser Tyr Ala Phe Phe Val Gln Thr Cys Arg
 1               5                  10                  15
Glu Glu His Lys Lys Lys His Pro Asp Ala Ser Val Asn Phe Ser Glu
            20                  25                  30
Phe Ser Lys Lys Cys Ser Glu Arg Trp Lys Thr Met Ser Ala Lys Glu
        35                  40                  45
Lys Gly Lys Phe Glu Asp Met Ala Lys Ala Asp Lys Ala Arg Tyr Glu
    50                  55                  60
Arg Glu Met Lys Thr Tyr Ile Pro Pro Lys Gly Glu Thr
65                  70                  75
```

<210> 23
<211> 20
<212> PRT
<213> Homo sapiens

<400> 23

```
Phe Lys Asp Pro Asn Ala Pro Lys Arg Leu Pro Ser Ala Phe Phe Leu
 1               5                  10                  15
Phe Cys Ser Glu
            20
```

<210> 24
<211> 216
<212> PRT
<213> Homo sapiens

<400> 24

```
Met Gly Lys Gly Asp Pro Lys Lys Pro Thr Gly Lys Met Ser Ser Tyr
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro
            20                  25                  30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
        35                  40                  45
Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65                  70                  75                  80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
                85                  90                  95
Arg Leu Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
            100                 105                 110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
        115                 120                 125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Tyr
    130                 135                 140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145                 150                 155                 160
Ala Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
                165                 170                 175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
            180                 185                 190
Asp Glu Glu Asp Glu Glu Glu Glu Glu Asp Glu Glu Asp Glu Glu Asp
        195                 200                 205
Glu Glu Glu Asp Asp Asp Asp Glu
    210                 215
```

<210> 25
<211> 211
<212> PRT
<213> Homo sapiens

<400> 25

```
Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Ser
            20                  25                  30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Asn Lys Cys Ser Glu Arg
        35                  40                  45
Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
```

```
Lys Ala Asp Lys Thr His Tyr Glu Arg Gln Met Lys Thr Tyr Ile Pro
65                  70                  75                  80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
                85                  90                  95
Arg Pro Pro Ser Ala Phe Phe Leu Phe Cys Ser Glu Tyr His Pro Lys
            100                 105                 110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Gly Asp Val Ala Lys Lys
        115                 120                 125
Leu Gly Glu Met Trp Asn Asn Thr Ala Ala Asp Asp Lys Gln Pro Gly
    130                 135                 140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Glu Lys Asp Ile Ala
145                 150                 155                 160
Ala Tyr Gln Ala Lys Gly Lys Pro Glu Ala Ala Lys Lys Gly Val Val
                165                 170                 175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
            180                 185                 190
Asp Glu Glu Asp Glu Glu Glu Glu Asp Glu Glu Asp Glu Glu Asp Asp
        195                 200                 205
Asp Asp Glu
    210
```

<210> 26
<211> 188
<212> PRT
<213> Homo sapiens

<400> 26

```
Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Arg Glu Glu Cys Lys Lys Lys His Pro
            20                  25                  30
Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
        35                  40                  45
Trp Lys Ala Met Ser Ala Lys Asp Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
Lys Val Asp Lys Asp Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65                  70                  75                  80
Pro Lys Gly Glu Thr Lys Lys Lys Phe Glu Asp Ser Asn Ala Pro Lys
                85                  90                  95
Arg Pro Pro Ser Ala Phe Leu Leu Phe Cys Ser Glu Tyr Cys Pro Lys
            100                 105                 110
Ile Lys Gly Glu His Pro Gly Leu Pro Ile Ser Asp Val Ala Lys Lys
        115                 120                 125
Leu Val Glu Met Trp Asn Asn Thr Phe Ala Asp Asp Lys Gln Leu Cys
    130                 135                 140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Lys Lys Asp Thr Ala
145                 150                 155                 160
Thr Tyr Arg Ala Lys Gly Lys Pro Asp Ala Ala Lys Lys Gly Val Val
                165                 170                 175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu
            180                 185
```

<210> 27
<211> 205
<212> PRT

<213> Homo sapiens

<400> 27

```
Met Asp Lys Ala Asp Pro Lys Lys Leu Arg Gly Glu Met Leu Ser Tyr
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Gln Glu Glu His Lys Lys Lys Asn Pro
            20                  25                  30
Asp Ala Ser Val Lys Phe Ser Glu Phe Leu Lys Lys Cys Ser Glu Thr
        35                  40                  45
Trp Lys Thr Ile Phe Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
Lys Ala Asp Lys Ala His Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65                  70                  75                  80
Pro Lys Gly Glu Lys Lys Lys Lys Phe Lys Asp Pro Asn Ala Pro Lys
                85                  90                  95
Arg Pro Pro Leu Ala Phe Phe Leu Phe Cys Ser Glu Tyr Arg Pro Lys
            100                 105                 110
Ile Lys Gly Glu His Pro Gly Leu Ser Ile Asp Asp Val Val Lys Lys
        115                 120                 125
Leu Ala Gly Met Trp Asn Asn Thr Ala Ala Ala Asp Lys Gln Phe Tyr
    130                 135                 140
Glu Lys Lys Ala Ala Lys Leu Lys Glu Lys Tyr Lys Lys Asp Ile Ala
145                 150                 155                 160
Ala Tyr Arg Ala Lys Gly Lys Pro Asn Ser Ala Lys Lys Arg Val Val
                165                 170                 175
Lys Ala Glu Lys Ser Lys Lys Lys Lys Glu Glu Glu Glu Asp Glu Glu
            180                 185                 190
Asp Glu Gln Glu Glu Glu Asn Glu Glu Asp Asp Asp Lys
        195                 200                 205
```

<210> 28
<211> 80
<212> PRT
<213> Homo sapiens

<400> 28

```
Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Cys
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Trp Glu Glu His Lys Lys Gln Tyr Pro
            20                  25                  30
Asp Ala Ser Ile Asn Phe Ser Glu Phe Ser Gln Lys Cys Pro Glu Thr
        35                  40                  45
Trp Lys Thr Thr Ile Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Pro
    50                  55                  60
Lys Ala Asp Lys Ala His Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro
65                  70                  75                  80
```

<210> 29
<211> 80
<212> PRT
<213> Homo sapiens

<400> 29

```
Lys Gln Arg Gly Lys Met Pro Ser Tyr Val Phe Cys Val Gln Thr Cys
 1               5                  10                  15
```

```
Pro Glu Glu Arg Lys Lys Lys His Pro Asp Ala Ser Val Asn Phe Ser
            20                  25                  30
Glu Phe Ser Lys Lys Cys Leu Val Arg Gly Lys Thr Met Ser Ala Lys
        35                  40                  45
Glu Lys Gly Gln Phe Glu Ala Met Ala Arg Ala Asp Lys Ala Arg Tyr
    50                  55                  60
Glu Arg Glu Met Lys Thr Tyr Ile Pro Pro Lys Gly Glu Thr Lys Lys
65                  70                  75                  80
```

<210> 30
<211> 86
<212> PRT
<213> Homo sapiens

<400> 30

```
Met Gly Lys Arg Asp Pro Lys Gln Pro Arg Gly Lys Met Ser Ser Tyr
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Ala Gln Glu Glu His Lys Lys Lys Gln Leu
            20                  25                  30
Asp Ala Ser Val Ser Phe Ser Glu Phe Ser Lys Asn Cys Ser Glu Arg
        35                  40                  45
Trp Lys Thr Met Ser Val Lys Glu Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
Lys Ala Asp Lys Ala Cys Tyr Glu Arg Glu Met Lys Ile Tyr Pro Tyr
65                  70                  75                  80
Leu Lys Gly Arg Gln Lys
                85
```

<210> 31
<211> 70
<212> PRT
<213> Homo sapiens

<400> 31

```
Met Gly Lys Gly Asp Pro Lys Lys Pro Arg Glu Lys Met Pro Ser Tyr
 1               5                  10                  15
Ala Phe Phe Val Gln Thr Cys Arg Glu Ala His Lys Asn Lys His Pro
            20                  25                  30
Asp Ala Ser Val Asn Ser Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg
        35                  40                  45
Trp Lys Thr Met Pro Thr Lys Gln Lys Gly Lys Phe Glu Asp Met Ala
    50                  55                  60
Lys Ala Asp Arg Ala His
65                  70
```

<210> 32
<211> 648
<212> DNA
<213> Homo sapiens

<400> 32

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atgggcaaag gagatcctaa gaagccgaca ggcaaaatgt catcatatgc atttttgtg 60
caaacttgtc gggaggagca taagaagaag cacccagatg cttcagtcaa cttctcagag 120
ttttctaaga agtgctcaga gaggtggaag accatgtctg ctaaagagaa aggaaaattt 180
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gaagatatgg caaaggcgga caaggcccgt tatgaaagag aaatgaaaac ctatatccct 240
cccaaagggg agacaaaaaa gaagttcaag gatcccaatg cacccaagag gcttccttcg 300
gccttcttcc tcttctgctc tgagtatcgc ccaaaaatca aaggagaaca tcctggcctg 360
tccattggtg atgttgcgaa gaaactggga gagatgtgga ataacactgc tgcagatgac 420
aagcagcctt atgaaaagaa ggctgcgaag ctgaaggaaa aatacgaaaa ggatatagct 480
gcatatcgag ctaaaggaaa gcctgatgca gcaaaaaagg gagttgtcaa ggctgaaaaa 540
agcaagaaaa agaaggaaga ggaggaagat gaggaagatg aagaggatga ggaggaggag 600
gaagatgaag aagatgaaga agatgaagaa gaagatgatg atgatgaa 648

<210> 33
<211> 633
<212> DNA
<213> Homo sapiens

<400> 33
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caaacttgtc gggaggagca taagaagaag cactcagatg cttcagtcaa cttctcagag 120
ttttctaaca agtgctcaga gaggtggaag accatgtctg ctaaagagaa aggaaaattt 180
gaggatatgg caaaggcgga caagacccat tatgaaagac aaatgaaaac ctatatccct 240
cccaaagggg agacaaaaaa gaagttcaag gatcccaatg cacccaagag gcctccttcg 300
gccttcttcc tgttctgctc tgagtatcac ccaaaaatca aaggagaaca tcctggcctg 360
tccattggtg atgttgcgaa gaaactggga gagatgtgga ataacactgc tgcagatgac 420
aagcagcctg gtgaaaagaa ggctgcgaag ctgaaggaaa aatacgaaaa ggatattgct 480
gcatatcaag ctaaaggaaa gcctgaggca gcaaaaaagg gagttgtcaa agctgaaaaa 540
agcaagaaaa agaaggaaga ggaggaagat gaggaagatg aagaggatga ggaggaggaa 600
gatgaagaag atgaagaaga tgatgatgat gaa 633

<210> 34
<211> 564
<212> DNA
<213> Homo sapiens

<400> 34
atgggcaaag gagaccctaa gaagccgaga ggcaaaatgt catcatatgc atttttgtg 60
caaacttgtc gggaggagtg taagaagaag cacccagatg cttcagtcaa cttctcagag 120
ttttctaaga agtgctcaga gaggtggaag gccatgtctg ctaaagataa aggaaaattt 180
gaagatatgg caaaggtgga caaagaccgt tatgaaagag aaatgaaaac ctatatccct 240
cctaaagggg agacaaaaaa gaagttcgag gattccaatg cacccaagag gcctccttcg 300
gccttttttgc tgttctgctc tgagtattgc ccaaaaatca aaggagagca tcctggcctg 360
cctattagcg atgttgcaaa gaaactggta gagatgtgga ataacacttt tgcagatgac 420
aagcagcttt gtgaaaagaa ggctgcaaag ctgaaggaaa aatacaaaaa ggatacagct 480
acatatcgag ctaaaggaaa gcctgatgca gcaaaaaagg gagttgtcaa ggctgaaaaa 540
agcaagaaaa agaaggaaga ggag 564

<210> 35
<211> 615
<212> DNA
<213> Homo sapiens

<400> 35
atggacaaag cagatcctaa gaagctgaga ggtgaaatgt tatcatatgc atttttgtg 60
caaacttgtc aggaggagca taagaagaag aacccagatg cttcagtcaa gttctcagag 120
tttttaaaga agtgctcaga gacatggaag accatttttg ctaaagagaa aggaaaattt 180
gaagatatgg caaaggcgga caaggcccat tatgaaagag aaatgaaaac ctatatccct 240
cctaaagggg agaaaaaaaa gaagttcaag gatcccaatg cacccaagag gcctcctttg 300
gccttttttcc tgttctgctc tgagtatcgc ccaaaaatca aaggagaaca tcctggcctg 360
tccattgatg atgttgtgaa gaaactggca gggatgtgga ataacaccgc tgcagctgac 420

aagcagtttt atgaaaagaa ggctgcaaag ctgaaggaaa aatacaaaaa ggatattgct 480
gcatatcgag ctaaaggaaa gcctaattca gcaaaaaaga gagttgtcaa ggctgaaaaa 540
agcaagaaaa agaaggaaga ggaagaagat gaagaggatg aacaagagga ggaaaatgaa 600
gaagatgatg ataaa 615

<210> 36
<211> 240
<212> DNA
<213> Homo sapiens

<400> 36
atgggcaaag gagatcctaa gaagccgaga ggcaaaatgt catcatgtgc atttttgtg 60
caaacttgtt gggaggagca taagaagcag tacccagatg cttcaatcaa cttctcagag 120
ttttctcaga agtgcccaga gacgtggaag accacgattg ctaaagagaa aggaaaattt 180
gaagatatgc caaaggcaga caaggcccat tatgaaagag aaatgaaaac ctatataccc 240

<210> 37
<211> 240
<212> DNA
<213> Homo sapiens

<400> 37
aaacagagag gcaaaatgcc atcgtatgta ttttgtgtgc aaacttgtcc ggaggagcgt 60
aagaagaaac acccagatgc ttcagtcaac ttctcagagt tttctaagaa gtgcttagtg 120
agggggaaga ccatgtctgc taaagagaaa ggacaatttg aagctatggc aagggcagac 180
aaggcccgtt acgaaagaga aatgaaaaca tatatccctc ctaaagggga gacaaaaaaa 240

<210> 38
<211> 258
<212> DNA
<213> Homo sapiens

<400> 38
atgggcaaaa gagaccctaa gcagccaaga ggcaaaatgt catcatatgc atttttgtg 60
caaactgctc aggaggagca caagaagaaa caactagatg cttcagtcag tttctcagag 120
ttttctaaga actgctcaga gaggtggaag accatgtctg ttaaagagaa aggaaaattt 180
gaagacatgg caaaggcaga caaggcctgt tatgaaagag aaatgaaaat atatccctac 240
ttaaagggga gacaaaaa 258

<210> 39
<211> 211
<212> DNA
<213> Homo sapiens

<400> 39
atgggcaaag gagaccctaa gaagccaaga gagaaaatgc catcatatgc atttttgtg 60
caaacttgta gggaggcaca taagaacaaa catccagatg cttcagtcaa ctcctcagag 120
ttttctaaga agtgctcaga gaggtggaag accatgccta ctaaacagaa aggaaaattc 180
gaagatatgg caaaggcaga cagggcccat a 211

<210> 40
<211> 54
<212> PRT
<213> Homo sapiens

<400> 40
Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1   5   10   15
Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
            20   25   30
Ala Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
        35   40   45
Pro Pro Lys Gly Glu Thr
    50

<210> 41
<211> 53
<212> PRT
<213> Homo sapiens

<400> 41
Asp Ser Ser Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu Arg
 1   5   10   15
Trp Lys Thr Met Ser Ala Lys Glu Lys Ser Lys Phe Glu Asp Met Ala
            20   25   30
Lys Ser Asp Lys Ala Arg Tyr Asp Arg Glu Met Lys Asn Tyr Val Pro
        35   40   45
Pro Lys Gly Asp Lys
    50

<210> 42
<211> 54
<212> PRT
<213> Homo sapiens

<400> 42
Pro Glu Val Pro Val Asn Phe Ala Glu Phe Ser Lys Lys Cys Ser Glu
 1   5   10   15
Arg Trp Lys Thr Val Ser Gly Lys Glu Lys Ser Lys Phe Asp Glu Met
            20   25   30
Ala Lys Ala Asp Lys Val Arg Tyr Asp Arg Glu Met Lys Asp Tyr Gly
        35   40   45
Pro Ala Lys Gly Gly Lys
    50

<210> 43
<211> 54
<212> PRT
<213> Homo sapiens

<400> 43
Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1   5   10   15
Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
            20   25   30
Ala Lys Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
        35   40   45
Pro Pro Lys Gly Glu Thr
    50

<210> 44
<211> 54
<212> PRT
<213> Homo sapiens

<400> 44
Ser Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Asn Lys Cys Ser Glu
1 5 10 15
Arg Trp Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
20 25 30
Ala Lys Ala Asp Lys Thr His Tyr Glu Arg Gln Met Lys Thr Tyr Ile
35 40 45
Pro Pro Lys Gly Glu Thr
50

<210> 45
<211> 54
<212> PRT
<213> Homo sapiens

<400> 45
Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu
1 5 10 15
Arg Trp Lys Ala Met Ser Ala Lys Asp Lys Gly Lys Phe Glu Asp Met
20 25 30
Ala Lys Val Asp Lys Ala Asp Tyr Glu Arg Glu Met Lys Thr Tyr Ile
35 40 45
Pro Pro Lys Gly Glu Thr
50

<210> 46
<211> 54
<212> PRT
<213> Homo sapiens

<400> 46
Pro Asp Ala Ser Val Lys Phe Ser Glu Phe Leu Lys Lys Cys Ser Glu
1 5 10 15
Thr Trp Lys Thr Ile Phe Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
20 25 30
Ala Lys Ala Asp Lys Ala His Tyr Glu Arg Glu Met Lys Thr Tyr Ile
35 40 45
Pro Pro Lys Gly Glu Lys
50

<210> 47
<211> 54
<212> PRT
<213> Homo sapiens

<400> 47
Pro Asp Ala Ser Ile Asn Phe Ser Glu Phe Ser Gln Lys Cys Pro Glu
1 5 10 15

```
Thr Trp Lys Thr Thr Ile Ala Lys Glu Lys Gly Lys Phe Glu Asp Met
            20                  25                  30
Ala Lys Ala Asp Lys Ala His Tyr Glu Arg Glu Met Lys Thr Tyr Ile
        35                  40                  45
Pro Pro Lys Gly Glu Thr
    50
```

<210> 48
<211> 38
<212> PRT
<213> Homo sapiens

<400> 48

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Pro Asp Ala Ser Val Asn Ser Ser Glu Phe Ser Lys Lys Cys Ser Glu
 1               5                  10                  15
Arg Trp Lys Thr Met Pro Thr Lys Gln Gly Lys Phe Glu Asp Met Ala
            20                  25                  30
Lys Ala Asp Arg Ala His
        35
```

<210> 49
<211> 54
<212> PRT
<213> Homo sapiens

<400> 49

```
Pro Asp Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Leu Val
 1               5                  10                  15
Arg Gly Lys Thr Met Ser Ala Lys Glu Lys Gly Gln Phe Glu Ala Met
            20                  25                  30
Ala Arg Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile
        35                  40                  45
Pro Pro Lys Gly Glu Thr
    50
```

<210> 50
<211> 54
<212> PRT
<213> Homo sapiens

<400> 50

```
Leu Asp Ala Ser Val Ser Phe Ser Glu Phe Ser Asn Lys Cys Ser Glu
 1               5                  10                  15
Arg Trp Lys Thr Met Ser Val Lys Glu Lys Gly Lys Phe Glu Asp Met
            20                  25                  30
Ala Lys Ala Asp Lys Ala Cys Tyr Glu Arg Glu Met Lys Ile Tyr Pro
        35                  40                  45
Tyr Leu Lys Gly Arg Gln
    50
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<210> 51
<211> 74
<212> PRT

<213> Homo sapiens

<400> 51
Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1   5   10   15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
            20   25   30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
        35   40   45
Ala Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys
    50   55   60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65   70

<210> 52
<211> 74
<212> PRT
<213> Homo sapiens

<400> 52
Lys Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1   5   10   15
Phe Cys Ser Glu His Arg Pro Lys Ile Lys Ser Glu His Pro Gly Leu
            20   25   30
Ser Ile Gly Asp Thr Ala Lys Lys Leu Gly Glu Met Trp Ser Glu Gln
        35   40   45
Ser Ala Lys Asp Lys Gln Pro Tyr Glu Gln Lys Ala Ala Lys Leu Lys
    50   55   60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65   70

<210> 53
<211> 74
<212> PRT
<213> Homo sapiens

<400> 53
Phe Lys Asp Pro Asn Ala Pro Lys Arg Leu Pro Ser Ala Phe Phe Leu
 1   5   10   15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
            20   25   30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
        35   40   45
Ala Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys
    50   55   60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65   70

<210> 54
<211> 74
<212> PRT
<213> Homo sapiens

<400> 54

```
Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1               5                  10                  15
Phe Cys Ser Glu Tyr His Pro Lys Ile Lys Gly Glu His Pro Gly Leu
            20                  25                  30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
        35                  40                  45
Ala Ala Asp Asp Lys Gln Pro Gly Glu Lys Lys Ala Ala Lys Leu Lys
    50                  55                  60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr
65                  70
```

<210> 55
<211> 74
<212> PRT
<213> Homo sapiens

<400> 55

```
Phe Lys Asp Ser Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Leu Leu
 1               5                  10                  15
Phe Cys Ser Glu Tyr Cys Pro Lys Ile Lys Gly Glu His Pro Gly Leu
            20                  25                  30
Pro Ile Ser Asp Val Ala Lys Lys Leu Val Glu Met Trp Asn Asn Thr
        35                  40                  45
Phe Ala Asp Asp Lys Gln Leu Cys Glu Lys Lys Ala Ala Lys Leu Lys
    50                  55                  60
Glu Lys Tyr Lys Lys Asp Thr Ala Thr Tyr
65                  70
```

<210> 56
<211> 74
<212> PRT
<213> Homo sapiens

<400> 56

```
Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1               5                  10                  15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
            20                  25                  30
Ser Ile Gly Asp Val Val Lys Lys Leu Ala Gly Met Trp Asn Asn Thr
        35                  40                  45
Ala Ala Ala Asp Lys Gln Phe Tyr Glu Lys Lys Ala Ala Lys Leu Lys
    50                  55                  60
Glu Lys Tyr Lys Lys Asp Ile Ala Ala Tyr
65                  70
```

<210> 57
<211> 84
<212> PRT
<213> Homo sapiens

<400> 57

```
Gly Lys Gly Asp Pro Lys Lys Pro Arg Gly Lys Met Ser Ser Tyr Ala
 1               5                  10                  15
```

```
Phe Phe Val Gln Thr Cys Arg Glu Glu His Lys Lys Lys His Pro Asp
            20                  25                  30
Ala Ser Val Asn Phe Ser Glu Phe Ser Lys Lys Cys Ser Glu Arg Trp
        35                  40                  45
Lys Thr Met Ser Ala Lys Glu Lys Gly Lys Phe Glu Asp Met Ala Lys
    50                  55                  60
Ala Asp Lys Ala Arg Tyr Glu Arg Glu Met Lys Thr Tyr Ile Pro Pro
65                  70                  75                  80
Lys Gly Glu Thr
```

<210> 58
<211> 92
<212> PRT
<213> Homo sapiens

<400> 58

```
Phe Lys Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Ala Phe Phe Leu
 1               5                  10                  15
Phe Cys Ser Glu Tyr Arg Pro Lys Ile Lys Gly Glu His Pro Gly Leu
            20                  25                  30
Ser Ile Gly Asp Val Ala Lys Lys Leu Gly Glu Met Trp Asn Asn Thr
        35                  40                  45
Ala Ala Asp Asp Lys Gln Pro Tyr Glu Lys Lys Ala Ala Lys Leu Lys
    50                  55                  60
Glu Lys Tyr Glu Lys Asp Ile Ala Ala Tyr Arg Ala Lys Gly Lys Pro
65                  70                  75                  80
Asp Ala Ala Lys Lys Gly Val Val Lys Ala Glu Lys
                85                  90
```